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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

Seth A. Darst et al.

Application No.: 10/783,206

Filed: February 20, 2004

For: CRYSTAL OF BACTERIAL CORE RNA
POLYMERASE WITH RIFAMPICIN AND
METHODS OF USE THEREOF

Examiner: Not yet known

Art Unit: 1625

Attorney Docket No.: IPT-012.02

CERTIFICATE OF MAILING

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INFORMATION DISCLOSURE STATEMENT
UNDER 37 CFR 1.97 (b)(3)

Sir:

In compliance with the requirements of 37 C.F.R. 1.56 and 1.97(b)(3), submitted herewith on Form PTO-1449 is a list of publications known to Applicants and/or their Attorney/Agent. Under 35 U.S.C. § 120, the above-identified application has the benefit of an earlier filing date of the following application: U.S. Serial No. 09/802,755 filed on March 9, 2001. Copies of the documents (References C1-C82) identified in the Form PTO-1449 are not provided because they were previously cited by or submitted to the Patent Office in the prior patent application; therefore, they are not required to be provided in this application. However, Applicants will gladly furnish copies of some or all of same upon request.

Applicants respectfully request that the Examiner consider the listed publications and indicate they were considered by making appropriate notations on the attached Form 1449.

This submission does not represent that a search has been made or that no better art exists. Nor does it constitute an admission that the cited documents are material or constitute "prior art." If the Examiner applies the listed documents as prior art against any claim in the application and Applicant determines that the cited documents do not constitute "prior art" under United States law, Applicants reserve the right to present to the Office the relevant facts and law regarding the appropriate status of such documents. Applicants further reserve the right to take appropriate action to establish the patentability of the disclosed invention over the listed documents, should one or more of the referenced documents be applied against the claims of the present application.

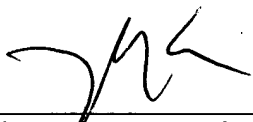
Applicants have listed dates of publication on the attached PTO-1449 for the cited documents based on information presently available to the undersigned. However, the listed publication dates should not be construed that the information in the cited documents was actually published or otherwise publicly available on the date indicated.

Under 37 C.F.R. § 1.97 (b)(3), this Information Disclosure Statement is being filed before the mailing date of the first Office Action on the merits; therefore, no fee is believed to be due in connection with this submission. However, the Commissioner is authorized to charge any deficiencies or credit any overpayment to/from our **Deposit Account, No. 06-1448, Reference IPT-012.02.**

Respectfully Submitted,

Date: May 24, 2005

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Agent for Applicants

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

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Sheet	1	of	11
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Complete if Known

<i>Application Number</i>	10/783,206
<i>Filing Date</i>	February 20, 2004
<i>First Named Inventor</i>	Seth A. Darst et al.
<i>Art Unit</i>	1625
<i>Examiner Name</i>	Not yet known
<i>Attorney Docket Number</i>	1PT-012.02

U.S. PATENT DOCUMENTS

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FOREIGN PATENT DOCUMENTS

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Date
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Sheet 2 of 11

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Application Number	10/783,206
Filing Date	02/20/04
First Named Inventor	Seth A. Darst et al.
Art Unit	1625
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Attorney Docket Number	IPT-012.02

NON PATENT LITERATURE DOCUMENTS

Examiner Initials *	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
	C1	Adams et al., Cross-validated Maximum Likelihood Enhances Crystallographic Simulated Annealing Refinement, <i>Proc. Natl. Acad. Sci. USA</i> 94:5018-5023 (1997)	
	C2	Allison et. al., Extensive Homology among the Largest Subunits of Ekaryotic and Prokaryotic RNA Polymerases, <i>Cell</i> Vol. 42:599-610 (1985)	
	C3	Archambault et al., Genetics of Eukaryotic RNA Polymerases I, II, and III, <i>Microbiol. Rev.</i> 57(3):703-724 (1993)	
	C4	Arora , Correlation of Structure and Activity in Ansamycins Molecular Structure of Sodium Rifamycin SV, <i>Molecular Pharmacology</i> , 23, 133-140 (1983)	
	C5	Borukhov et al., Mapping of Trypsin Cleavage and Antibody-binding Sites and Delineation of a Dispensable Domain in the β Subunit of Escherichia coli RNA Polymerase, <i>J. Biol. Chem.</i> 266:23921-23926 (1991)	
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	C8	Carson, J., Ribbons 2.0, <i>Appl. Crystallogr.</i> 24:958-961 (1991)	
	C9	Chamberlin, "New Models for the Mechanism of Transcription Elongation and its Regulation," The Harvey Lectures, 88:1-21 (1993)	
	C10	Cheetham et al., Structural Basis for Initiation of Transcription from an RNA Polymerase-Promoter Complex, <i>Nature</i> 399:80-83 (1999)	
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Sheet 3 of 11

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	C14	Darst et al., Three-Dimensional Structure of Yeast RNA Polymerase II at 16 Å Resolution, <i>Cell</i> 66:121-128 (1991)	
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	C23	Gentry and Burgess, Cross-Linking of Escherichia coli RNA Polymerase Subunits: Identification of β' as the Binding Site of ω, <i>Biochem.</i> 32:11224-11227 (1993)	
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	C25	Gross et al., A Structure/Function Analysis of Escherichia coli RNA Polymerase, <i>Philosophical Transactions of the Royal Society of London - Series B: Biological Sciences</i> 351:475-482 (1996)	
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Sheet 4 of 11

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Attorney Docket Number	IPT-012.02

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Examiner Initials *	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
	C27	Helmann and Chamberlain, Structure and Function of Bacterial Sigma Factors, <i>Ann. Rev. of Biochem.</i> 57:839-872 (1988)	
	C28	Heyduk et al., Determinants of RNA Polymerase α Subunit for Interaction with β , β' , and σ Ubunits: Hydroxyl-Radical Protein Footprinting, <i>Proc. Natl. Acad. Sci. USA</i> 93:10162-10166 (1996)	
	C29	Hinkle et. al., Studies Binding of Escherichia coli RNA Polymerase to DNA, <i>J. Mol. Biol.</i> , 70 pp 209-220 (1972)	
	C30	Jin and Gross, Mapping and Sequencing of Mutations in the Escherichia coli rpoB Gene that Lead to Rifampicin Resistance, <i>J. Molec. Biol.</i> 202:45-58 (1988)	
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	C37	Loizos, N. et al., Mapping Interactions of Escherichia coli GreB with RNA Polymerase and Ternary Elongation Complexes, <i>J. Biol. Chem.</i> 274(33):23378-23386 (1999)	
	C38	Markovtsov et al., Protein-RNA Interactions in the Active Center of Transcription Elongation Complex, <i>Proc. Natl. Acad. Sci. USA</i> 93:3221-3226 (1996)	
	C39	McClure, et. al., On the Mechanism of Rifampicin Inhibition of RNA Synthesis, <i>The Journal of Biological Chemistry</i> , Vol 253(24):8949-8956 (1978)	

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Sheet	5	of	11		

NON PATENT LITERATURE DOCUMENTS			
Examiner Initials *	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
	C40	Mecasas et al., Development of RNA Polymerase-Promoter Contacts During Open Complex Formation, <i>J. Mol. Biol.</i> 220:585-597 (1991)	
	C41	Metzger et al., A Cinematographic View of Escherichia coli RNA Polymerase Translocation, <i>Embo. J.</i> 8:2745-2754 (1989)	
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	C44	Morse, et. al., Isolation of Rifampin-Resistant Mutants of <i>Listeria monocytogenes</i> and Their Characterization of rpoB Gene Sequencing, Temperature Sensitivity for Growth, and Interaction with an Epithelial Cell Line, <i>Journal of Clinical Microbiology</i> , Sept., 2913-2919 (1999)	
	C45	Mukherjee and Chatterji, Studies on the ω Subunit of Escherichia coli RNA Polymerase Its Role in the Recovery of Denatured Enzyme Activity, <i>Eur. J. Biochem.</i> 247:884-889 (1997)	
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	C47	Mustaev et al., Topology of the RNA Polymerase Active Center Probed by Chimeric Rifampicin-Nucleotide Compounds, <i>Proc. Natl. Acad. Sci. USA</i> 91:12036-12040 (1994)	
	C48	Mutsaev et al., Modular Organization of the Catalytic Center of RNA Polymerase, <i>Proc. Natl. Acad. Sci. USA</i> 94:6641-6645 (1997)	
	C49	Naryshkin et al., "Structural Organization of the RNA Polymerase-Promoter Open Complex", <i>Cell</i> 101: 601-611, (June 9, 2000)	
	C50	Naryshkina, T. et al., The β' Subunit of Escherichia coli RNA Polymerase is not Required for Interaction with Initiating Nucleotide but is Necessary for Interaction with Rifampicin, <i>J. Biol. Chem.</i> 276(16):13308-13313 (2001)	
	C51	Nicholls et al., Protein Folding and Association: Insights From the Interfacial and Thermodynamic Properties of Hydrocarbons, <i>Proteins Structure, Function and Genetics</i> 11:281-296 (1991)	
	C52	Nolte, Rifampicin resistance in <i>Neisseria meningitidis</i> ; evidence from a study of sibling strains, description of new mutations and notes on population genetics, <i>Journal of Antimicrobial Chemotherapy</i> , 39:747-755 (1997)	
	C53	Nudler, Transcription Elongation: Structural Basis and Mechanisms, <i>J. Mol. Biol.</i> 288:1-12 (1999)	

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	C54	Nudler et al., Transcription Processivity: Protein-DNA Interactions Holding Together the Elongation Complex, <i>Science</i> 273:211-217 (1996)	
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	C59	Padayachee et. al., Molecular Basis of Rifampin Resistance in Streptococcus pneumoniae, <i>Antimicrobial Agents and Chemotherapy</i> , Oct, 2361-2365 (1999)	
	C60	Polyakov et al., Three-Dimensional Structure of E. coli Core RNA Polymerase: Promoter Binding and Elongation Conformations of the Enzyme, <i>Cell</i> 83:365-373 (1995)	
	C61	Rost and Sander, Prediction of Protein Secondary Structure at Better than 70% Accuracy, <i>J. Mol. Biol.</i> 232:584-599 (1993)	
	C62	Schickor, P. et al., Topography of Intermediates in Transcription Initiation of E. coli, <i>EMBO J.</i> 9(7):2215-2220 (1990)	
	C63	Schultz et al., Three-Dimensional Model of Yeast RNA Polymerase I Determined by Electron Microscopy of Two-Dimensional Crystals, <i>EMBO J.</i> 12:2601-2607 (1993)	
	C64	Sentenac et al., "Yeast RNA Polymerase Subunits and Genes, <i>Transcriptional Regulation</i> (eds. McKnight, S.L. and Yamamoto, K.R.) in Cold Spring Harbor Laboratory, Cold Spring Harbor 27-54 (1992)	
	C65	Severinov et al., Dissection of the β Subunit in the Escherichia coli RNA Polymerase into Domains by Proteolytic Cleavage, <i>J. Biol. Chem.</i> 267:12813-12819. (1992)	

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STATEMENT BY APPLICANT**

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Sheet 7 of 11

Complete if Known

Application Number	10/783,206
Filing Date	02/20/04
First Named Inventor	Seth A. Darst et al.
Art Unit	1625
Examiner Name	Not yet known
Attorney Docket Number	IPT-012.02

NON PATENT LITERATURE DOCUMENTS

Examiner Initials *	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
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	C77	Zakharova et al., Fused and Overlapping rpoB and rpoC Genes in Helicobacters, Cambylobacters, and Related Bacteria, <i>J. Bacteriol.</i> 181: 3857-3859 (1999)	

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	C87	Burgess, "A New Method for the Large Scale Purification of Escherichia coli Deoxyribonucleic Acid-dependent Ribonucleic Acid Polymerase," <i>J. Biol. Mol.</i> 244(22):6180-6167 (1969)	
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	C89	Cramer et al., "Architecture of RNA Polymerase II and Implications for the Transcription Mechanism," <i>Science</i> 288:640-649 (2000)	

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				<i>Art Unit</i>	1625
				<i>Examiner Name</i>	Not yet known
				<i>Attorney Docket Number</i>	IPT-012.02
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	C90	Dunbrack et al., "Meeting review: the Second Meeting on the Critical Assessment of Techniques for Protein Structure Prediction (CASP2), Asilomar, California, December 13-16, 1996," <i>Folding & Design</i> , 2(2):R27-R42 (1997)	
	C91	Ezekiel and Hutchins, "Mutations affecting RNA Polymerase associated with Rifampicin Resistance in <i>Escherichia coli</i> ," <i>Nature London</i> 220:276-277 (1968)	
	C92	Hartmann et al., "The specific inhibition of the DNA-directed RNA synthesis by rifamycin," <i>Biochem. Biophys. Acta</i> . 145:843-844 (1967)	
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	C99	Lancini et al, "Structure-Activity Relationships in Rifamycins," In <i>Structure-Activity Relationship in Semisynthetic Antibiotics</i> (D. Perlaman ed.) 531-600 (1977)	
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	C101	Lisitsyn et al., <i>Bioorg. Khim</i> 10:127 (1984) (English Abstract)	

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Sheet 10 11

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	C102	Lisityn et al., "Mutation to rifampicin resistance at the beginning of the RNA polymerase β subunit gene in Escherichia coli," Mol. Gen. Genet., 196:173-174 (1984)	
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	C106	Schulz et al., "Rifampicin inhibition of RNA synthesis by destabilisation of DNA-RNA polymerase-oligonucleotide-complexes," Nucleic Acids Research, 9(24):6889-6906 (1981)	
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	C108	Sensi et al., "Rifomycin I. Isolation and Properties of Rifomycin B and Rifomycin Complex," Antibiotics Annual 1959-1960, 262-270	
	C109	Severinova et al., "Inhibition of Escherichia coli RNA Polymerase by Bacteriophage T4 AsiA," J. Mol. Biol., 279:9-18 (1998)	
	C110	Shickor et al., "Topography of intermediates in transcription initiation of E. coli," The EMBO Journal, 9(7):2215-2220 (1990)	
	C111	Shinnick, Current Topics in Microbiol. Immunol. - Springer-Verlag Berlin Heidelberg, NY (1996)	
	C112	Stevens et al., "Incorporation of the Adenine Ribonucleotide into RNA by Cell Fractions from E. Coli B," Biochem. Biophys. Research Communications, 3(1):92-96 (1960)	
	C113	Wehrli et al., "Action of Rifamycin on RNA-Polymerase from Sensitive and Resistant Bacteria," Biochem. Biophys. Research Communications, 32(2):284-288 (1968)	

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Sheet	11	of	11		

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